

Examiner has cited col. 6, line 60 through col. 7, line 11 of Anderson et al. as allegedly disclosing this feature.

It is respectfully submitted that the Examiner has misinterpreted the Anderson disclosure. The cited passage discloses measurements taken of a series of pulses, followed by adjustment of the pulse width. Anderson does not vary an ejection time duration while executing a plurality of ink droplet ejections as claimed.

The cited passage of Anderson merely discloses the “cartridge characterization” process that is entirely different than the claimed method of claim 1. That is, as explained in the paragraphs immediately preceding the cited passage of Anderson et al., the drive pulse width is adjusted to compensate for variations in previously delivered ink mass which results from variations in the resistances of each of the heaters within each of the driven pressure chambers. In the example disclosed, a nominal pulse width of 1.6 microseconds is determined. This pulse width includes a 0.3 microsecond pre-heat pulse during which no ink is output, and a 1.3 microsecond main pulse during which ink is output from each driven chamber of the print head. Further, a 0.9 microsecond off time separates the two pulses and a nominal value of 35.85 ohms is used for the heater resistance.

An average resistance value of 34.87 ohms was measured for the given section of the heater array and an interpolation was conducted to determine a delta for the pulselwidth to accommodate the difference between the initial nominal resistance value used and the actual measured value. In particular, in the example disclosed, a delta of 0.1 microseconds was added to the main drive pulse resulting in a main drive pulse of 1.4 microseconds for the respective

section of the heater array. Similar steps were then performed for each of the sections of the heater array.

Then, in the passage cited by the Examiner, the nozzles are fired using the adjusted pulse widths and the ink drop mass is measured for each nozzle opening in the respective array sections. In the example disclosed, an average ink drop mass of 32 nanograms is compared to a nominal value of 28 nanograms and a determination that the firing pulse needs to be adjusted is made. Specifically, in accordance with the invention disclosed in Anderson et al., it is determined that the 0.1 microseconds added to the main pulse, discussed above, should have been added to the pre-heat pulse instead in order to maintain the same total energy delivered to the ink while not increasing the actual firing time of the nozzle.

Thus, Anderson et al. discloses a method of characterizing print cartridges that is entirely different from the claimed method. While Anderson does disclose that “the fire pulse should be adjusted” (col. 6, lines 66-67), this adjustment is made after measuring ink drop mass on the basis of measured heater resistances. The adjustment is not made based on results from “executing a plurality of ink droplet ejections from the nozzle orifice while varying an ejecting time”, as required by the claims.

Anderson’s ejecting conditions are disclosed as being constant, not varied while the ejecting amounts or the ejection speeds are measured. The disclosure of Anderson that “the fire pulse should be adjusted” clearly means that such an adjustment is made after the measurement, in order to determine each value in the offset table shown in Col. 7, which is used for actually correcting such a fire pulse which “should be” adjusted. If the ejecting condition (i.e., the fire

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pulse) was adjusted during each measurement as alleged by the Examiner, it would be impossible to obtain the specific values in the offset table.

Since the above described deficiency of Anderson is not cured by any of the applied art, Applicant submits that the pending rejections are unfounded. Reconsideration and allowance of this application are believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



John F. Rabena
Registration No. 38,584

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
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CUSTOMER NUMBER

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